

REMARKS

Claims 1 – 16 are pending with claims 5, 6, 13 and 14 withdrawn from consideration. By this Response, claims 1, 11 and 15 are amended to remove minor informalities and to provide clarity. Reconsideration and further examination in view of the amendments above and following remarks is respectfully requested.

The Office Action objects to claim 1 under the mistaken impression that the “fixing member” cited in claim 1 (referred to by the Office Action as the “fuser roller”) transmits heat, as opposed to light. This objection is respectfully traversed.

More particularly, Applicant respectfully points to paragraph [0059], which states that “[T]he fixing member 74a is made of a material which can transmit light in the ultraviolet light waveband, the visible light waveband, and the infrared light waveband, that is, light in a frequency band from 200 nm to 1,300 nm.” Thus, it is a function of fixing member 74a to transmit light from a light source to a printed recording medium in order to cure/fix a photocurable ink. Accordingly, withdrawal of the objection is respectfully requested.

The Office Action rejects claims 1-3, 9, 11, 15 and 16 under 35 U.S.C. §102(b) over Hwang (U.S. Patent No. 6,049,692); rejects claims 4 and 12 under 35 U.S.C. §103(a) over Hwang in view of Cerrah (U.S. Patent No. 6,061,545); rejects claim 7 under 35 U.S.C. §103(a) over Hwang; rejects claim 8 under 35 U.S.C. §103(a) over Hwang in view of Muramatsu (U.S. Patent No. 5,774,763); and rejects claim 10 under 35 U.S.C. §103(a) over Hwang in view of Ewert (U.S. Patent No. 6,523,949). These rejections are respectfully traversed.

In order to sustain a rejection of anticipation under 35 U.S.C. §102(b) or establish a *prima facie* case of obviousness under 35 U.S.C. §103(a), the Office Action must identify each and every

limitation of the claimed subject matter.

However, Applicant asserts that none of the applied art of record, individually or in combination, teaches or suggests an apparatus for fixing photocurable inks that includes a light source for irradiating light for fixation to a recording side of a recording medium printed with photocurable ink and a fixing member which is disposed in a conveyance path of the printed recording medium ... wherein light for fixation which transmits through the fixing member is focused on a contact part between the fixing member and the recording side of the recording medium, as recited in independent claim 1 and similarly recited in independent claims 11 and 15.

Hwang discloses a heating roller apparatus for equipment using an electro-photographic process. See, Abstract. As shown in Fig. 3 and described in the accompanying text, Hwang uses a printing device that includes a heating roller 11 having an inner coating material 10 and a halogen lamp 12 for heating the roller 11. See, col. 4, lines 2+. Hwang does not disclose an apparatus for fixing photocurable inks that includes a light source for irradiating light for fixation to a recording side of a recording medium printed with photocurable ink and a fixing member which is disposed in a conveyance path of the printed recording medium, and wherein light for fixation which transmits through the fixing member is focused on a contact part between the fixing member and the recording side of the recording medium, as recited in independent claim 1 and similarly recited in independent claims 11 and 15.

To the contrary, as specifically stated in Hwang (col. 4, lines 11-14) the coating material is designed to absorb light and convert such light into thermal energy. Accordingly, the heating roller 11 cannot transmit/convey light from halogen lamp 12 to the recording medium 17. Thus, Hwang does not teach or suggest each and every limitation of the independent claims.

Applicants respectfully point out that the presently claimed embodiments enjoy a number of advantages over the applied art of record. For example, by using device or method according to the claim language, photo-curable ink can be directly irradiated in the contact part between a fixing unit and a recording side of a recording medium. Thus, the photo-curable ink can be cured/fixed in a state where air (oxygen) is blocked, so that the requisite energy for curing/fixing is substantially reduced as compared to systems where a photo-curable reaction occurs in air. See, e.g., pg. 4, line 26 to pg. 5, line 5.

As with Hwang, Cerrah, Muramatsu and Ewert similarly fail disclose an apparatus for fixing photocurable inks using a fixing member that can transmit and focus light for fixation, as recited in independent claim 1 and similarly recited in independent claims 11 and 15.

That is, as opposed to using photo-curable inks, the devices of Cerrah and Muramatsu use heat as a method to affix toner to a medium. See, Cerrah (col. 8, lines 30+) and Muramatsu (col 8, lines 24+). Accordingly, Cerrah and Muramatsu have no possible use for a fixing device that can transmit light.

While Ewert does disclose an ink-jet printer embodiment employing an “ultraviolet light based ink” (col. 9, lines 36+), nowhere does Ewert use any cylindrical fixing member that can transmit/convey and focus the ultraviolet light.

Therefore, Cerrah, Muramatsu and Ewert do not provide for the deficiencies of Hwang. Thus, independent claims 1, 11 and 15 are directed to patentable subject matter, and the dependent claims are further directed to patentable subject matter by virtue of their dependency as well as for the additional elements they recite. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the outstanding rejections.

CONCLUSION

In light of the foregoing, Applicants submit that the application is now in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicants respectfully request that the Examiner contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

Respectfully submitted,
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